Mapping Needs Update Support System Tutorial for Controllers

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Accessibilty

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Welcome to the Mapping Needs Update Support System Tutorial for Controllers

This tutorial has a list of glossary terms at the end of frequently used terms throughout this tutorial.

Learning Objectives

After reviewing this tutorial, the user should:

Be able to gather information for updating map maintenance needs to better locate properties relative to Special Flood Hazard Areas on a Flood Insurance Rate Map (FIRM);

Be able to gather information for updating flood data to provide communities with an accurate FIRM to establish floodplain management and properly rated flood insurance policies; and

Be able to enter communities' mapping needs in the Mapping Needs Update Support System database.

Introduction

The Mapping Needs Assessment (MNA) Process identifies flood hazard mapping needs for communities nationwide and, through the use of the Mapping Needs Update Support System (MNUSS), maintains an inventory of those needs for future map updates.

In accordance with Section 575 of the National Flood Insurance Reform Act of 1994, the Federal Emergency Management Agency (FEMA) assesses *"once during a 5-year period…the need to revise and update all floodplain areas and flood risk zones identified, delineated, or established based on an analysis of all natural hazards affecting flood risks."*

FEMA uses the results of flood hazard mapping needs assessments for overall management of the mapping program. Many of the existing Flood Insurance Rate Maps (FIRMs) are over 15 years old and need revising. Since there are over 90,000 map panels currently published, revising the FIRMs is a big task. Gathering accurate and up-to-date information will help FEMA effectively assess community mapping needs. FEMA uses this information to assist in evaluating communities for funding allocation and study prioritizing.

Also, identifying mapping needs is a critical step in identifying those communities that would benefit from partnering with FEMA as a Cooperating Technical Partners (CTP) and that are willing to assist in updating their FIRMs.

Introduction *(continued)*

Through the MNA process, all mapped communities participating in the National Flood Insurance Program (NFIP) can have their mapping needs identified and documented in MNUSS.

MNUSS is a password-protected web-based database that is used to save and compile communities' mapping needs. These needs are ranked and prioritized nationwide.

To date, more than 19,000 mapped communities participating in the NFIP have been contacted for mapping update needs.

This tutorial will help FEMA staff and MNUSS controllers to add, edit and view needs for map maintenance and flood data updates.

It will also explain how to assess mapping needs and the completion of the MNUSS Data Worksheet in order to enter information into MNUSS.

MNUSS Data Worksheet

The “Guide to Input of Mapping Needs Into MNUSS” and the MNUSS Data Worksheet will help in gathering necessary information for a community’s mapping needs and aid in efficient and comprehensive data entry into MNUSS.

Gathering Information

The MNUSS Data Worksheet is a tool that may be completed before entering needs into MNUSS. (https://www.mnuss.fema.gov/PDF/mnusswrksht.pdf)

The following information is helpful in guiding you through completion of the worksheet.

Community FIRMs

Engineer's scale

Calculator

Map wheel (if available)

Gathering Information

Community Description & Origin

Community Name – name of the community; can be found in the FIRM's title

State – state where community is located; can be found in the FIRM's title

CID – Community Identification Number; 6 digits; can be found in the FIRM's title

Origin – organization (entity), contact name, title, address, phone and fax numbers, and e-mail address for the source of the mapping need information

(Note: All of this information is required.)

Map Maintenance Needs

Map Maintenance Needs are those mapping needs that do not require changes to the Special Flood Hazard Areas (SFHA), floodways, or base flood elevations (BFE); therefore, they do not require new engineering analyses.

Map maintenance needs consist of changes to map features on the FIRM, such as road names, aligning panels, adding or revising elevation reference marks (ERM), corporate limits, adding Letters of Map Changes (LOMC), and converting to countywide format.

Map Maintenance Needs relate to these features found on the community's base map. The physical features help map users locate properties relative to the SFHA. It is important that the features shown on the map be accurate and up-to-date.

Map Maintenance Needs

Multiple map maintenance needs should be recorded on the same worksheet, but each need should be entered separately into MNUSS. Document the map panel numbers, effective date of the affected panels and details of changes.

When examining the FIRM for updates, consider:

- Adding streets to panel – new roads built; inaccuracies of road locations relative to the SFHA
- Adding ERMS – ERMs shown, destroyed, or added
- Aligning contiguous map panels – FIRM panels alignment
- Adding Letter of Map Changes – Letters of Map Revision and mappable Letters of Map Amendments completed after the effective FIRM was issued
- Converting to countywide format – benefits to having community FIRM converted to countywide format
- Annexations and Corporate Limit corrections – corporate limits changed or community annexations after the effective FIRM was issued

(Note: Not all roads are shown on a FIRM. On some FIRMs, smaller roads are only shown if they are in or near the SFHA.)

Flood Data Update Needs

Flood Data Update needs are mapping needs that require new engineering analyses, which may result in the revision of the SFHA, floodway, and/or BFEs. Common flood data update needs include changes in hydrologic or hydraulic conditions that require new modeling.

These changes in hydrologic and hydraulic conditions may include development and land-use changes, new bridges, culverts, or earth moving activities.

To determine the community's Flood Data Update needs, any changes in hydrologic and hydraulic conditions since the community's Flood Insurance Study (FIS) was conducted should be evaluated.

A community's FIS is based on hydrologic and hydraulic conditions. Hydrologic conditions determine the quantity of runoff generated by a given rainfall event, and hydraulic conditions determine the extent of the flooding caused by a given stream discharge.

Flood Data Update Needs (continued)

Hydrologic Conditions

Hydrology reflects the amount of water flowing in a stream. Typical changes that may affect hydrology:

- Increase in development within the area draining to the stream, and
- Construction of a dam or lake.

Development will often increase the amount of water flowing in a stream because of the impervious areas associated with development, such as street and parking lots, which prevent rainfall from being absorbed into the ground. This may cause increases in flood hazard elevation, as well as changes to the SFHAs. Some dams or lakes reduce the amount of water flowing in the stream. The outlets for these dams and lakes are sized to release water at a lower rate than the floodwaters flowing to them. When a flood occurs, the floodwaters are stored behind the dam or in the lake and released at a lower rate.

Hydraulic Conditions

Hydraulics affects how high the floodwaters rise from a given amount of runoff. It pertains to the means of carrying the runoff from streams, along with the velocity and location of the flow of water.

Some conditions that affect hydraulics are the geometry of the stream channel, vegetation or roughness in the stream channel, slope of the stream, and the presence of structures, such as, bridges, culverts, or dams. Typical changes that may affect hydraulics are:

Channel relocation,

Channel modifications (i.e., changes in channel geometry), and

Modification of bridges, culverts, or dams

Flood Data Update Needs (continued)

Evaluate each flooding source or study reach (stream section) that needs to be revised separately on the FIRM.

Check Study Category (the type of flooding source)

- Riverine (river, streams, and lakes; except for the Great Lakes)
- Coastal (the Great Lakes, oceans, and areas affected by tide or wave action)
- Alluvial (sedimentary deposit located at a topographic break)

Indicate the flooding source (the name of the flooding source that requires a map update)

- If unnamed, write, “Unnamed tributary to …(name of river, stream, lake or ocean)”.
- If the name of the flooding source is unknown, be sure to indicate the location of the flooding source in the “Notes” field of MNUSS.
- Landmarks on the FIRM can also give a good description of the location of the unnamed tributary.
- If the flooding source is named, but unnamed on the FIRM, include an explanation in the “Notes” field in MNUSS.

Flood Data Update Needs (continued)

Need Types

There are 5 need types for Flood Data Update needs:

- Changes to hydrologic conditions – changes that affect the amount of water that flows downstream during a flood (i.e., urban development in the watershed which increases the amount of rainfall runoff).

- Changes to hydraulic conditions – changes that affect the passing of floodwaters in streams (i.e., construction of a road or culvert constricts the area available to carry floodwaters).

- Changes to floodplain width – changes that affect the area subject to inundation by the base flood, whether greater or less than that shown on the effective FIRM (i.e., new topographic information displaying different areas in the floodplain).

- Changes to BFE – changes that affect the water surface elevation of the 1% annual chance flood shown in the effective FIS or FIRM (i.e., the high-water mark from a base flood storm is higher or lower than the BFE shown on the effective FIRM).

- Changes to coastal elevations – changes affecting the 1% annual chance flood elevations from coastal flooding shown in the effective FIS (i.e., the high-water mark from a base flood storm, including a hurricane or other severe storm, is higher or lower than the elevations shown on the effective FIRM).

Flood Data Update Needs (continued)

Flooding Source Specific Data

- Average Change in BFE – an estimated increase or decrease (0-1 feet, 1-5 feet, or more than 5 feet) of how much the BFEs on the FIRMs will change if the flooding source is restudied.

- Length of Study Reach – the length (in miles) of the flooding source or the measurement of the streamline on a flood hazard map for areas that require restudy. The length can also be determined from the profile in the FIS. Identify beginning and ending points of the flooding source to better describe the physical location.

- Average Floodplain Width – the average floodplain width (in feet) of the SFHA on the effective flood hazard map panels for areas that require restudy.

Once the Data Worksheet is entirely completed, the information is now ready to be entered into the database.

Accessing MNUSS

Go to https://www.mnuss.fema.gov/ to view the opening login screen. Enter user name and password to continue. The User Name will be assigned by the MNUSS System Administrator. If you forget your password, click on the appropriate link to have your password e-mailed to you.

The MNUSS Data Entry/ Edit Menu, Reports and Functions Menu, Resources Menu, and Administrative Menu will help you navigate through the web pages to view, enter, and edit data.

Before entering a new need, it is recommended that the current needs for the community in MNUSS be reviewed for duplicate data.

(Note: If there is no data entered within 20 minutes after logging in, the user will automatically be logged out.)

Data Entry/ Edit Menu

The options under the Data Entry/ Edit Menu allow the user to add and edit needs and data for mapped and unmapped communities. Options include:

- Mapped Communities
- Unmapped Communities

Data Entry/ Edit Menu

Mapped Communities

Click Mapped Communities under the Data Entry/ Edit Menu from the main menu sidebar. The Mapped Communities function window will appear.

Select:

- Edit Needs (search for a mapped community to edit needs.), or
- Add Needs (enter a mapped community's Flood Data Update or Map Maintenance needs data.), or
- Edit Communities (search for a mapped community to edit community data.)

Data Entry/ Edit Menu

Mapped Communities

Edit Needs

If the button for Edit Needs is selected, the Geographic Location box will appear below to search by county, community name or CID.

Enter the full or partial county or community name or CID in the respective field and select the State from the drop down menu.

Click the “Advanced Search” link, or

Click the “Search” button.

Data Entry/ Edit Menu

Mapped Communities

Edit Needs (continued)

The Need: Search Results report window will appear with information for the requested community, county, or CID entered in the Edit Needs window. The report includes:

- Need ID
- CID
- Need Type
- Community Name
- County
- Status
- Flooding Source

Click on the Need ID number to edit the need details currently saved for the community. The Need: Edit window will appear with the community data.

Data Entry/ Edit Menu

Mapped Communities

Edit Needs (continued)

Data for the community's need details can be updated or added in the Need: Edit window.

In the General Information box, select:

- Study Category
- Riverine
- Coastal
- Alluvial
- Source
- Response to Letter
- CTP
- Future File
- Biennial Report
- Response to Questionnaire
- Flooding Event
- Other

In the Flooding Source box, select

- Multiple Sources
- A listed flooding source, or
- If the flooding source is not listed in the drop down menu, click the "Add Source" button to enter the additional flooding source.

Data Entry/ Edit Menu

Mapped Communities

Edit Needs (continued)

In the Need Types box, select all that apply:

- Changes to hydrologic conditions
- Changes to hydraulic conditions
- Changes in floodplain width
- Changes to BFEs
- No changes to BFEs

In the Data box, select:

- Anticipated BFE Change
    - Select the increase or decrease button and the number of feet in the change (less than 1 foot, 1-5 feet, or more than 5 feet). (Note: For guidance on determining the increase or decrease in BFE feet, reference the "Guide to Input of Mapping Needs Into MNUSS"; page 3.)
- Length of Study (in miles)
- Average width of floodplain (in feet)
- In the Notes field, provide the location of the flooding source (e.g. – 7 mile south of intersection I-94 and Main Street)

Data Entry/ Edit Menu

Mapped Communities

Edit Needs (continued)

In the Affected Panels box, check all of the FIRM panels affected by the need.

In the Origin of Need box, update or add any contact information for the origin or contact for the need.

Click the “Save” button to save the edits.

Once an existing need is edited by a MNUSS controller, it will automatically be committed to the MNUSS database. Existing needs edited by other MNUSS users will come to the controller for approval or rejection.

To view the community information, click on the CID or community name to display the Need Information for the community along with estimated costs. The Community Information window appears.

Data Entry/ Edit Menu

Mapped Communities

Edit Needs (continued)

At the top of the Community Information window are links to:

- Community Data – displays the Community data for the community.
- Ranking Data – displays Community data used for ranking.
    - Estimated Total Number of Structures in the Community
    - Projected Number of New Residential Structures (per year)
    - Projected Number of New Non-Residential Structures (per year)
    - Percentage of Structures in SFHA
    - Average Value of New Residential Structures
    - Average Value of New Non-Residential Structures
    - Projected Number of Building Permits (per year)
    - Total Number of Flood Insurance Policies
    - Total Land Area of the Community (square miles)
- Population Data – displays population information for the community
    - Current year
    - Current population
    - Previous year
    - Previous population
    - Land area (square miles)
    - Population Growth (number of people per square mile per year)

Data Entry/ Edit Menu

Mapped Communities

Edit Needs (continued)

- Effective Panels – displays the effective FIRM panels for the community.
- Related Files – displays computer files that are associated with the community.
    - Click on the "Related Files" link and select a file to view.
    - If files need to be uploaded regarding needs for the community, click the "Upload File" button. The MNUSS File Upload box will open.
        - Enter a description of the file's content.
        - Enter the file type (document, spreadsheet, text file)
        - Enter the filename and location (path) or click on "Browse" to choose a file.
        - Click the "Upload File" button to complete the upload.
- Home - returns to the MNUSS homepage.

Data Entry/ Edit Menu

Mapped Communities

Add Needs

If the button for Add Needs is selected, the Geographic Location box will appear below to search by county, community name or CID.

Enter the full or partial county or community name or CID in the respective field and select the State from the drop down menu.

In the Study Category box, select:

- Flood Data Update (riverine, coastal or alluvial), or
- Map Maintenance

Click the “Search” button.

Data Entry/ Edit Menu

Mapped Communities

Add Needs (continued)

The New Need: Community Results window will appear with possible matches for the community, county and State entered in the Add Need window.

Click on a CID or community name to continue.

The New Need window will appear to enter new need details.

(Note: If the desired community is not in the list, click the “Back” button to return to the New Need screen to re-enter the community, county name or CID.)

Data Entry/ Edit Menu

Mapped Communities

Add Needs (continued)

Enter the required information from the MNUSS Data Worksheet in the respective fields as explained in the previous section, Edit Needs.

In the Origin of Need box:

- Enter the contact information from the Origin section at the top of the MNUSS Data Worksheet, or
- Import the contact information by:
    - Clicking the "Search" button in the bottom of the Origin of Need Information box to import the contact information. The Entity Search window opens.
    - Enter the name of the organization or agency. Click "Search."
    - Select the contact by clicking on the name from the Entity column. All of the information is automatically placed in the Origin of Need Information window.

Click the "Save" button to save the new need.

New needs entered by a MNUSS controller, will automatically be committed to the MNUSS database. New needs entered by other MNUSS users will come to the controller for approval or rejection.

Data Entry/ Edit Menu

Mapped Communities

Add Needs (continued)

Once the data is saved in the MNUSS database, the Need: Confirmation window appears displaying the needs added. Enter any additional notes in the Need Notes and Comments section, if needed.

For Flood Data Updates, MNUSS has calculated the estimated cost of revising map panels that have mapping needs saved in MNUSS in the Study Costs section of the Confirmation page.

The cost includes study contractor, engineering review, digital conversions, and printing and shipping. Costs can be adjusted by percentage or amount with reason on the Cost Override page, if needed.

For map panels that have no needs, MNUSS calculates the cost for digital conversion and printing and shipping. A detailed description of the cost may be found in the document "Benefit Point Calculations in MNUSS."

Data Entry/ Edit Menu

Mapped Communities

Edit Communities

If the button for Edit Communities is selected, the Geographic Location box will appear below to search by county, community name or CID.

Enter the full or partial county or community name or CID in the respective field and select the State from the drop down menu.

Click the “Search” button.

The Edit: Community Search Results window will appear with information for the requested community, county, or CID entered in the Edit Communities window.

Data Entry/ Edit Menu

Mapped Communities

Edit Communities (continued)

The Edit: Search Results report includes:

- CID
- Community Name
- County
- Needs

Click on the CID or Community Name. The Community Information page for the selected community will appear. Click on any of the Community Information links at the top of the page to make edits.

Check or update all of the community data that applies to changes or updates of the community as recorded on the MNUSS Data Worksheet.

Click the "Save" button when finished.

Once an existing community is edited by a MNUSS controller, it will automatically be committed to the MNUSS database. Communities edited by other MNUSS users will come to the controller for approval or rejection.

Data Entry/ Edit Menu

Unmapped Communities

(Note: This section of MNUSS is currently under construction. The following information will be helpful in entering and editing needs for unmapped communities once this feature becomes available.)

Click Unmapped Communities under the Data Entry/ Edit Menu from the main menu sidebar. The Unmapped Communities function window will appear.

In the Geographic Location box, enter the full or partial community or county name or CID in the respective field and select a State from the drop down menu.

Click the “Search” button.

Data Entry/ Edit Menu

Unmapped Communities (continued)

The Unmapped Communities: Search Results window appears with all unmapped communities for the selected county or state.

- CID
- Community Name
- County
- State

Click the "View" button to view general, community, and flooding information and community mapping recommendations.

Data Entry/ Edit Menu

Unmapped Communities (continued)

To edit community and need information, click the "Edit" button. The Unmapped Communities: Edit window will appear. The report includes:

- General Information
    - Community
    - County
    - State
    - Date
    - Entered by (name)
    - Organization
- Community Information
    - Land Area
    - Population (latest year)
    - Population (previous recorded year)
    - Population Growth (number of people per square mile per year)

Data Entry/ Edit Menu

Unmapped Communities (continued)

- Flooding Information
    - Is the community Floodprone?
    - Map Need Identified
    - Number of Flooding Sources with Needs
    - Number of Declared Disasters
    - FHBM Status
    - FIRM Status
    - Does the Flood Hazard Data Exist? (If yes, include a description of the data that exists.)
- Community Mapping Recommendation (check all that apply)
    - Study required (Detailed, Use Existing Data, Approximate)
    - Conversation by Letter
    - None - Part of on-going study
    - None - No land use jurisdiction
    - None - Shown on another map
    - Does not qualify as a NFIP Community

Click the "Save" button to save the edits.

Reports and Functions Menu

Then options under the Reports and Functions Menu allow the user to generate or view reports from community mapping needs stored in MNUSS. Options include:

- Community Data
- Ranking
- Multi-Jurisdictional Groups
- Statistics
- Unit Costs
- Cost Distribution

Reports and Functions Menu

Community Data

This option conducts a search to get existing data of communities' demographics, general or specific mapping needs, or get needs by State or region.

Click Community Data from the main menu sidebar. The Report and Functions: Community Data window will appear.

Choose the type of needs you would like to view in a report:

- Community (for community demographics and general mapping needs), or
- Needs (for specific mapping needs), or
- Need Analysis (for mapping needs by State or region)

Reports and Functions Menu

Community Data

Community

This option allows the user to search for the mapping needs for a specific community.

Select the Community button in the report type box. The Geographic Location box will appear below to search by county or community name.

Enter the full or partial community or county name or CID in the respective field and select a State from the drop down menu.

Click the “Search” button.

Reports and Functions Menu

Community Data

Community – Search Results

The Community Data: Search Results window appears with matching community records for the county or community name entered in the previous geographic location window. The report contains:

- CID number
- Community Name
- County
- Needs (type of needs that require updating)
- View Calculations (lists benefit/cost parameters and calculations for the community)

To get the community's mapping needs information, click on the CID number or community name. The Community Summary Report window will open with all of the community-related information for the stored mapping needs.

Reports and Functions Menu

Community Data

Community – Search Results (continued)

Also, available in the Search Results window is a link to benefit and cost calculations. Click on the "View Calculations" link. The Benefit/Cost Parameters and Calculations window appears with the following data:

- Community Data
    - Population
        - Number of people for current year or latest census year
        - Number of people for previous year or last census year
    - Population Growth (average change in population per year)
    - Land Area (size of the land area of community)
- Effective FIRM
    - Number of Panels
    - Manual or Digital Availability
    - Panels Output
- Flood Data Update
    - Number of Needs
    - Number of Panels Affected
    - Benefit (in dollars)

Reports and Functions Menu

Community Data

Community – Search Results (continued)

- Map Maintenance
    - Number of Needs Identified
    - Number of Panels Affected by the need
    - Maintenance Benefit (in dollars) to update the manual panel
- Digital Conversion
    - Digital Benefits (in dollars) to convert the manual panels to digital maps
- Costs (in dollars)
    - Study contractor costs
    - Engineering Review costs
    - Digital Conversion costs
    - Printing and Shipping costs
- Total Benefit
    - Total of Benefits from Flood Data Update, Map Maintenance, and Digital Conversion

Reports and Functions Menu

Community Data

Community – Search Results (continued)

- Total Benefit
    - Total of Benefits from Flood Data Update, Map Maintenance, and Digital Conversion
- Total Cost
    - Total of study contractor costs, engineering review costs, digital conversion, and printing and shipping costs
- Benefit/Cost
    - Total benefits divided by costs in dollars
- Total Benefit Points
    - Benefit/Cost multiplied by 100

Reports and Functions Menu

Community Data

Community – Benefit Tables

The following data is in various Flood Data Updates and Map Maintenance Benefit Tables.

Digital Conversion Benefit

A. Fiscal Year
B. Estimated Number of Structures
C. Estimated Mortgage Transactions
D. Estimated Number of Map Reviews for Mortgage Purposes
E. Number of Building Permits
F. Number of Map Reviews for Building Permits
G. Estimated Number of Flood Insurance Policies
H. Estimated Number of Flood Insurance Ratings
I. Total Number of Map Reviews
J. Estimated Cost Reduction
K. Discounted Cost Reduction

Reports and Functions Menu

Community Data

Community – Benefit Tables (continued)

Maintenance Benefit Summary

A. Fiscal Year
B. Estimated Number of Structures
C. Estimated Number of Map Reviews for Mortgages
D. Number of New Residential Structures
E. Number of New Non-Residential Structures
F. Number of Building Permits
G. Number of Map Reviews for Building Permits
H. Percentage Structures in SFHA
I. Number of New Residential Structures Receiving Safer Development Benefit
J. Annual Damage Avoided (Per Residential Structure)
K. Annual Damage Avoided (Residential)
L. Number of New Non-Residential Structures Receiving Benefit
M. Annual Damage Avoided (Per Non-Residential Structure)
N. Annual Damage Avoided (Non-Residential)
O. Safer Development Benefit (Maintenance Items)
P. Number of Flood Insurance Policies
Q. Number of Flood Insurance Ratings
R. Precision Benefit (Maintenance Items)
S. Ease of Use Benefit (Maintenance Items)
T. Total Maintenance Benefit
U. Discounted Maintenance Benefit

Reports and Functions Menu

Community Data

Community – Benefit Tables (continued)

Restudy Residential Benefit

A. Fiscal Year
B. Number of New Residential Structures Per Square Mile
C. New Residential Structures in New or Updated SFHAs
D. Total Residential Structures Receiving Full Benefit
E. Structures Receiving Half Benefit
F. Average Value of New Residential Structure (Building Only)
G. Annual Damage Prevented (Per Structure)
H. Annual Damage Prevented
I. Increased Construction Costs (Per structure)
J. Increased Construction Costs
K. Restudy Benefit for New Structures
L. Total Number of Existing Residential Structures in New or Updated SFHA
M. Restudy Benefit for Existing Structures
N. Net Benefit
O. Need ID

Reports and Functions Menu

Community Data

Community – Benefit Tables (continued)

Restudy for Non-Residential Structures

A. Fiscal Year

B. Number of New Non-Residential Structures Per Square Mile

C. New Non-Residential Structures in New or Updated SFHAs

D. Total Non-Residential Structures Receiving Full Benefit

E. Structures Receiving Half Benefit

F. Average Value of New Non-Residential Structure (Building Only)

G. Annual Damage Prevented (Per Structure)

H. Annual Damage Prevented

I. Increased Construction Costs (Per structure)

J. Increased Construction Costs

K. Restudy Benefit for New Structures

L. Total Number of Existing Non-Residential Structures in New or Updated SFHA

M. Restudy Benefit for Existing Structures

N. Net Benefit

Reports and Functions Menu

Community Data

Community – Benefit Tables (continued)

Click on the Digital Conversion Benefit Formulas in MNUSS to get the formula description of the figures calculated in the table.

Click the “Print” link to print the Benefit Tables information.

Click the “Return to Search Results” link to view other communities’ Benefit/ Cost Parameters.

Reports and Functions Menu

Community Data

Need

This option allows the user to generate a report for a community's specific mapping need.

Click the Need button from the report type box. The Geographic Location box will appear.

Enter the full or partial county or community name or CID in the respective field and select the State from the drop down menu.

Click the "Search" button.

Reports and Functions Menu

Community Data

Need (continued)

The Community Data: Need Search Results window appears with need records for the county or community entered in the Need Report: Search window.

To view the Needs Information Details, click on the Need ID number. The Need report window will open.

To view the community's mapping needs information, click on the CID number or Community name in the Search Results window. The Community Summary Report window will open with all of the community-related information for the stored mapping needs and estimated costs for all needs identified for that community.

This report may be printed through the File menu of your Internet browser.

Click the "Close Window" link at the top of the report when finished viewing or printing.

Reports and Functions Menu

Community Data

Need Analysis

This option allows the user to compare flood data updates and map maintenance needs in a region, state, or county.

Click the Need Analysis button from the report type box. Additional data boxes will appear.

In the Geographic Location box:

- Select the Region button and the FEMA region from the drop down menu, or
- Select the State button and the state from the drop down menu, or
- Select the County and the State from the drop down menu. A list of counties in that state will automatically be displayed in the next drop down menu. Select a county.

Select the Study Type:

- Flood Date Updates
- Map Maintenance Needs, or
- Both (Flood Data Updates and Map Maintenance)

Reports and Functions Menu

Community Data

Need Analysis (continued)

In the Additional Criteria box, select how the information should be organized in the report of Search Results.

In the Order by section, select:

- Community Name (alphabetically)
- CID (chronologically)
- County (alphabetically)
- Need ID (sequentially)

In the Return section, select the status of needs to include:

- Existing Needs
- Needs Being Addressed
- Resolved Needs
- All Needs

Click the “Search” button.

Reports and Functions Menu

Community Data

Need Analysis (continued)

The Need Analysis Report for the selected region or State will appear. The report contains:

- Need ID
- CID
- Study Category
- Community Name
- County
- Length of Study
- Flooding Source
- Affected Panels
- Status

Click on a community's Need ID number to view more need information. The Data View: Need window opens for the selected Need ID.

This report may be printed through the File menu of your Internet browser.

Click the "Close Window" link at the top or bottom of the report when finished viewing or printing.

Reports and Functions Menu

Community Data

Ranking

This option allows the user to generate ranking reports for mapped NFIP-participating communities stored in MNUSS, by FEMA region or State.

Click Ranking from the main menu sidebar. Additional ranking criteria boxes will appear.

In the Geographic Location box, select how you would like to receive the ranking criteria.

- Region
- State

In the Return box, specify the number of records to generate at once on a page (25, 50, 100, 250).

In the Ranking Report Option, select the report options for communities' needs to generate.

- Communities with flood data update needs, including those with map maintenance needs on the same map panels with flood data update needs. (Does not include communities with map maintenance needs only.)
- Communities with any and all types of needs.

Select:

- "Rank" button - to return the selected ranking report
- "Clear" button - to reset the form
- "Cancel" button - to return to MNUSS homepage

Reports and Functions Menu

Community Data

Ranking (continued)

The Community Ranking Report window opens with the ranking criteria for the selected options (i.e. – Region or State) FEMA region or state. The table gives:

- Ranking Order Number
- Community (name)
- CID
- County
- State
- Benefit
- Total Cost
- Benefit Points
- Benefit/ Cost

Reports and Functions Menu

Community Data

Ranking (continued)

The “Find” field box at the top right corner of the report can be used to find a community’s ranking quickly.

Enter a community name in the “Find your community/ group in the ranking” field box. Click the “Search” button.

The report page with the community ranking will be returned highlighted in the table.

- Communities are listed in descending order, with the top ranked community as number one and ranked by benefit points. Under the Community column, all of the community names are links to the Community Summary Report. Select a community to view by clicking on the name of the community. The Community Summary Report window opens.

Reports and Functions Menu

Community Data

Ranking (continued)

The Community Summary Report gives all the details for the community's mapping needs and estimated costs.

Estimated Costs

- Study costs
- Engineering Review costs
- Digital Conversion costs
- Printing & Shipping costs
- Total Estimated Cost for this Community

Needs

- Need ID number
- Need Classification (Study Category-Need type)
- Origin (Entity, organization)
- Flooding Source
- Status

At the top of the Community Summary Report are links to other community information and mapping needs.

This report may be printed through the File menu of your Internet browser.

Click the "Home" link at the top of the report when finished viewing or printing.

Reports and Functions Menu

Multi-Jurisdictional Groups

This option allows the user to create, edit and view groups of communities for comparative ranking against other grouped or individual communities.

Click Multi-Jurisdictional Groups (MJG) from the sidebar menu. The Multi-Jurisdictional Groups: Create Group window appears.

Creating a countywide group: (communities located in one county)

Select the Create Countywide Group button.

Enter the county name.

Select a State from the drop down menu.

Click the "Continue" button.

Reports and Functions Menu

Multi-Jurisdictional Groups (continued)

The MJG: Countywide Search Results window appears with the county name or possible matches.

Click the “Create Countywide Group” button to create a list of communities within the selected county. The MJG Results window appears with all of the communities for the selected county. Results include:

- MJG ID
- MJG Name
- MJG Type
- Calculated Group Benefit (for all communities with the selected county)
    - CID
    - Community Name
    - County
    - Total Benefits
    - Study Costs
    - Review, Mapping, and Printing Costs
    - Digital Conversion Costs
    - Total Costs
    - Adjusted Study Costs
    - Total Calculated Group Benefit Points

Reports and Functions Menu

Multi-Jurisdictional Groups (continued)

Creating a non-countywide group: (communities in multiple counties)

Select the “Create a Non-Countywide Group” button.

Create and enter a group name.

Click the “Continue” button. The MJG: Non-Countywide Search window appears.

In the Geographic Location box:

- Enter a county name and select a State from the drop down menu of the community location that will be included in the group, or
- Enter a community name and select a State from the drop down menu.

Click the “Search” button.

Reports and Functions Menu

Multi-Jurisdictional Groups (continued)

The MJG: Non-Countywide Search Results window appears with possible community matches. The report includes:

- Community Name
- County Name
- CID

Click the "Add to Group" for each community that needs to be added to the group. For every community added to the group, "Selected" will appear at the end of the community row. Unmapped communities are marked by "(u)" at the end of the community name.

The selected communities included in the group are also listed below the main list of communities in the MJG: Non-Countywide Search Results window.

To delete any of the communities from the group, click on the wastebasket icon by the community name.

To find and include additional communities, click the "Find More Communities" button. The MJG: Non-Countywide Search window re-appears. Repeat the process to include additional communities.

Once you have finished adding all communities to be included in the group, save the list by clicking the "Save Group" button.

Reports and Functions Menu

Multi-Jurisdictional Groups (continued)

Click the "Calculate/Save" button to calculate all costs and points and save the group.

Click the "Notes" button to add notes or comments regarding the group of communities.

Click the "Rank" button to rank communities within the MJG. The MJG Ranking Report: Ranking Criteria window appears. Click the "Rank" button.

The MJG Ranking Report for the selected State or region opens with the highlighted group displaying its ranking with other communities.

(Review Ranking from previous section, if needed.)

To get your existing groups:

Select the “View your Groups” link at the bottom of the MJG: Create Group window. The MJG: Edit window appears.

- Group ID
- Group Name
- Type
- Date Created
- Date Modified
- Notes
- Action

Click on a Group ID link to get calculated group benefits and costs for all communities in the selected group. The MJG: Results window displays all total and adjusted costs.

Reports and Functions Menu

Statistics

This option generates reports of mapping needs for communities that have responded and have not responded to FEMA in updating flood data update and map maintenance needs. Also, the number of flood map panels with mapping update needs by FEMA region can be viewed here.

Click Statistics in the main menu bar. The Reports and Functions: Statistics window appears.

Select a button in the Choose a report box:

- Responding/Non-Responding to view communities that have and have not responded to FEMA's request for mapping needs. These statistics are applicable only to needs gathered from communities by request of FEMA, during the first five-year cycle (1994-1999), in accordance with Section 575 of the National Flood Insurance Reform Act of 1994.

- Panel Analysis to view the number of flood map panels with mapping needs by FEMA region.

Reports and Functions Menu

Statistics

Responding/Non-Responding

If the button for Responding/Non-Responding is selected, the Search Criteria box appears at the bottom of the page.

Select a State from the drop down menu.

Select a Report Type from the drop down menu of mapping needs types to include in the report.

- Flood Data Updates and Maintenance Needs
- Flood Data Updates Only
- Maintenance Needs Only
- Communities Reporting No Needs
- Communities Responding
- Communities Not Responding
- All Responding/Non-Responding Statistics

Click the "Search" button.

Reports and Functions Menu

Statistics

Responding/Non-Responding (continued)

The Responding/Non-Responding Statistics Report window appears for the selected state and report type.

The report contains the CID and community name for report types:

- Flood Data Updates and Maintenance Needs
- Flood Data Updates Only
- Maintenance Needs Only
- Communities Reporting No Needs
- Communities Responding
- Communities Not Responding

The report for All Responding/Non-Responding Statistics provides:

- CID
- Community Name
- Status(of Response(s))

Links to other report types are listed above the current report.

This report may be printed through the File menu of your Internet browser.

Click the “Close Window” link at the top of the report when finished viewing or printing.

Reports and Functions Menu

Statistics

Panel Analysis

If the button for Panel Analysis is selected, the “Generate Report” button appears below the box.

Click the "Generate Report" button to get the Mapping Panel Distribution.

The Mapping Panel Distribution table lists the total numbers of flood map panels for each FEMA region in the following categories:

- Region
- Total Number of Panels With Maintenance Needs Only
- Total Number of Panels With Restudy Needs Only
- Total Number of Panels With Maintenance And Restudy Needs
- Total Number of Panels With No Needs
- Total Number of Panels With No Response

This report may be printed through the File menu of your Internet browser.

Click the "Close Window" link at the top of the report when finished viewing or printing.

Reports and Functions Menu

Unit Costs

This option allows the user to generate detailed unit costs for each component of total Cost Benefits for the community.

Click Unit Costs from the main menu sidebar. The Data View: Unit Costs: Search window appears.

In the Select box, click the button and select from the drop down menu to specify the type of records to return in the report.

- Regional
- State

Click the “Submit” button. The Data View: Unit Costs report window appears.

Reports and Functions Menu

Unit Costs (continued)

The report provides detailed unit costs for each component of total Cost Benefits for the community.

- Study costs (riverine, coastal, alluvial)
- Engineering Review costs (riverine, coastal, alluvial)
- Digital Conversion costs (manual to digital)
- Printing and shipping costs

This report may be printed through the File menu of your Internet browser.

Click the “Close Window” link at the top of the report when finished viewing or printing.

Reports and Functions Menu

Cost Distribution

This option allows the user to get and print costs for each component of the total costs, in dollars and percentages, for the flood data update needs and map maintenance needs by FEMA region or State.

Click Cost Distribution from the main menu sidebar. The MNUSS Cost Distribution Reports window appears.

Select the type of report to view:

- Study Contractor Costs (Includes only Study Contractor Costs)
- Need Communities (Includes only Study Contractor, engineering review, digital conversion and printing and distribution costs for communities with flood data and/or maintenance needs.)
- All Communities (Includes only Study Contractor, engineering review, digital conversion and printing and distribution costs for communities.)

To view the costs in dollars along with the percentages of total region costs for each state, check the “Show Costs” check box.

Click the “Submit” button.

Reports and Functions Menu

Cost Distribution

The window for the MNUSS Cost Distribution Report for the selected report type will open. The report table is sectioned by FEMA regions with the States listed alphabetically for the respective region.

The report table lists the following information:

Study Contractor Report

- State/Region
- Cost for Communities with Flood Data Update Needs
  (Note: This column can only be returned when the "Show Costs" check box is checked from the previous MNUSS Cost Distribution Reports window.)
- State Cost as a Percentage of Total Region Cost
- Cost as a Percentage of Total National Cost

Need Communities Report

- State/Region
- Cost for Communities with Flood Data Update Needs
  (Note: This column includes communities identifying flood data needs only, and communities identifying flood data update and maintenance needs. Also, this column can only be returned when the "Show Costs" check box is checked from the previous MNUSS Cost Distribution Reports window.)
- Cost for Communities with Maintenance Needs Only
  (Note: This column can only be returned when the "Show Costs" check box is checked from the previous MNUSS Cost Distribution Reports window.)
- Total Cost
  (Note: This column can only be returned when the "Show Costs" check box is checked from the previous MNUSS Cost Distribution Reports window.)
- State Cost as a Percentage of Total Region Cost
- Cost as a Percentage of Total National Cost

Reports and Functions Menu

Cost Distribution

All Communities Report

- State/Region
- Cost for Communities with Flood Data Update Needs
  (Note: This column includes communities identifying flood data needs only, and communities identifying flood data update and maintenance needs. Also, this column can only be returned when the "Show Costs" check box is checked from the previous MNUSS Cost Distribution Reports window.)
- Cost for Communities with Maintenance Needs Only
  (Note: This column can only be returned when the "Show Costs" check box is checked from the previous MNUSS Cost Distribution Reports window.)
- Cost for Digitizing Maps In Communities with No Needs
  (Note: This column can only be returned when the "Show Costs" check box is checked from the previous MNUSS Cost Distribution Reports window.)
- Total Cost
  (Note: This column can only be returned when the "Show Costs" check box is checked from the previous MNUSS Cost Distribution Reports window.)
- State Cost as a Percentage of Total Region Cost
- Cost as a Percentage of Total National Cost

Resources Menu

There are documents available under the Resources Menu to assist the user in gathering accurate information and understanding how that information is used for communities' mapping needs in MNUSS. Options include:

- MNUSS Guide
- MNUSS Data Worksheet
- Benefit Points Calculations
- Multi-Jurisdictional Groups Guide

Resources Menu

MNUSS Guide

The "Guide to Input of Mapping Needs Into MNUSS" will assist users in the assessment of mapping needs and data entry into MNUSS. It lists detailed information on gathering information and determining map maintenance and flood data update needs.
(https://www.mnuss.fema.gov/PDF/mnussguides.pdf)

MNUSS Data Worksheet

This worksheet is helpful for completing all mapping needs data for entering into MNUSS.
(https://www.mnuss.fema.gov/PDF/mnusswrksht.pdf)

Benefit Points Calculations

This document explains how Benefit Points are calculated in MNUSS, and provides the parameters, their sources, and assumptions.
https://www.mnuss.fema.gov/PDF/BPReport.pdf

Multi-Jurisdictional Groups Guide

This document explains the design and functionality of multi-jurisdictional groups. (https://www.mnuss.fema.gov/PDF/MJGGuide.pdf)

Resources Menu

Benefit Points

All NFIP communities' mapping needs are prioritized in MNUSS and are based upon the Benefits Points calculated for each community. The benefits and costs are calculated based on flood data update needs and map maintenance needs.

Benefits Points are a quantitative comparison of the benefits of addressing a community's mapping needs to the costs of updating the community's flood maps. The benefits and costs listed in MNUSS are estimates for mapping updates and are not intended for actual budgetary planning purposes. The estimates reflect certain assumptions and may not reflect actual site-specific conditions.

Get detailed information on the "Benefits Points Calculations in MNUSS" (https://www.mnuss.fema.gov/PDF/BPReport.pdf)

Resources Menu

Benefit Points

Ranking of Communities in MNUSS Using Benefit Points

The benefits calculation includes:

- Flood Data Update needs
- Map Maintenance needs
- Digital Conversion (converting the flood map from manual to digital)

Costs calculations include 4 primary components in updating the flood map:

- Study Costs
- Engineering Review
- Digital Conversion
- Printing and Shipping

Benefit points are calculated by dividing the estimated benefits by the estimated costs and multiplying by 100.

Resources Menu

Benefit Points

Ranking of Communities in MNUSS Using Benefit Points (continued)

All mapping updates and digital conversion provide some benefits. The extent of the benefits depends on the nature and magnitude of the update and characteristics of the community and its SFHAs.

All 3 types of benefits (Flood Data Update, Map Maintenance and Digital Conversion) are calculated in MNUSS separately for each for the next 30 years. The sum of the benefits over the 30 years is the total benefit for the community. All benefits are calculated in dollars.

The total cost of updating a community's FIRMs will be equal to the cost to revise the panels that require flood data updates, plus the cost to convert all remaining panels to digital format.

Resources Menu

Benefit Points

Ranking of Communities in MNUSS Using Benefit Points (continued)

If the Study Costs Total is excessive or underestimated, click the “Override” button. The Data Entry: Need: Cost Override window appears.

- Select the increase or decrease button and enter a number in the percentage field box to adjust the costs by percentage, or
- Select the increase or decrease button and enter a number in the amount field box to adjust the cost by dollars.

(Note: The percentage field box and dollar amount box adjust automatically according to the number entered in the opposite box.)

An explanation for the cost override must be given and stored. In the “Reason” box, select all of the reasons that apply for the cost override and adjustment.

Resources Menu

Benefit Points

Ranking of Communities in MNUSS Using Benefit Points (continued)

The following engineering categories are **not** appropriate for this study

- Floodway analysis
- Field Survey
- Hydrologic Analysis
- There is Existing Data Information
- Cost Sharing is Anticipated
- Other (Be sure to provide a brief explanation for the cost override if none of the above reason apply.)

Click the “Save” button to save the Cost Override adjustment and reason.

Resources Menu

Benefit Points

Viewing Costs

Click on the CID or community name to display the Need Information for the community along with estimated costs. The Community Information window appears.

The Estimated Costs box displays:

- Study Costs
- Engineering Review Costs
- Digital Conversion
- Printing and Shipping

The “Benefit Points Calculations in MNUSS” link takes you to the document, which provides further information on how benefits, costs and points are calculated.

Administrative Menu

The Administrative Menu has utilities and information to help the user understand and manage security tools and keeps users informed on latest updates or information on MNUSS. Options include:

- Announcements
- Feedback
- Change Password
- User Rights

Administrative Menu

Announcements

Announcements inform users of latest updates or changes in the Mapping Needs Assessment process and MNUSS.

Click Announcements under the Administrative Menu of the main menu sidebar. A list of posted announcement links will be displayed.

Select the announcement you would like to read.

Click the “Return to Main Menu” link to close the window and return to the main menu.

Feedback

Users are encouraged to use feedback to provide comments or questions about MNUSS.

Click Feedback under the Administrative Menu on the main menu sidebar. The Feedback window will appear.

Enter a comment or question in the Feedback window
(Note: Feedback is limited to 2,000 characters, including spaces).

Click the “Save” button. A confirmation window will open that your feedback has been sent.

Select:

- Home – to return to the MNUSS home page, or
- Submit more feedback – to send another comment or question.

Administrative Menu

Change Password

MNUSS is a password-protected web-based database. To ensure all data entered and viewed is secure, each user has a different password. Users should protect their password and change it occasionally for increased security when using MNUSS.

Click Change Password under the Administrative Menu of the main menu sidebar. The Change Password window will appear.

Enter your old password, new password, and confirm your password in the respective boxes. Click:

- Save - save your new password, or
- Reset - to start over in changing your password.

If you forget your password, Click the "Forget Your Password? Click Here." link on the login screen to have your password e-mailed to you.

User Rights

User rights to control, add, edit, and view information are based on factors such as, a user's affiliation with FEMA and the NFIP and the duties needed to enter data into the system. Only the system administrator can modify existing user rights.

Click User Rights under the Administrative Menu of the main menu sidebar. The User Rights window will appear with your user rights for getting and editing information.

- Geographic Location - lists all of the FEMA Regions.
- Level - lists your level of rights, 1 through 5.
- Rights - lists the types of rights you have for the information in the Geographic Location.

For a more detailed description of user rights, click the "User Rights Glossary" link at the top of the User Rights window.

Summary

As communities grow and change, it is important to update flood maps with the latest changes for flood data and map maintenance needs.

The MNA process advances towards FEMA's goal to have accurate flood maps that show the current risk of the 1% annual chance flood event. Flood Data and Map Maintenance data are helpful to FEMA so they can be responsive to community's mapping needs.

The MNA process is a building block in updating flood maps. It provides the starting point for determining which communities and flooding sources to study or restudy. Gathering complete needs information for communities will help in developing a more efficient mapping update process.

For the latest updates on the MNA process and MNUSS, visit the Mapping Needs web page (http://www.fema.gov/mit/tsd/mn_main.htm) on the FEMA Flood Hazard Mapping Website (http://www.fema.gov/mit/tsd/).

Glossary for MNUSS Tutorial for Controllers

1% chance annual elevation - It is the flood elevation that has a 1% chance of happening in any given year, or approximately a 26-percent chance of occurrence over the life of a 30-year mortgage. Also known as the Base Flood Elevation (BFE)

1% chance annual flood (or 100-year flood) -- The flood having a 1-percent chance of being equaled or exceeded in any given year; also known as the base flood. The 1-percent annual chance flood, which is the standard used by most Federal and state agencies, is used by the National Flood Insurance Program (NFIP) as the standard for floodplain management and to determine the need for flood insurance. A structure located within a special flood hazard area shown on an NFIP map has a 26 percent chance of suffering flood damage during the term of a 30-year mortgage.

Alluvial - A sedimentary deposit located at a topographic break, such as the base of a mountain front, escarpment or valley side, which is composed of streamflow and/or debris flow sediments and has the shape of a fully or partially extended fan.

Active alluvial fan flooding is characterized by flow path uncertainty, while inactive alluvial fan flooding is characterized by relatively stable flow paths with a higher degree of predictability.

Base Flood – The flood having a 1-percent chance of being equaled or exceeded in any given year; also known as the 100-year flood. The base flood, which is the standard used by most Federal and state agencies, is used by the National Flood Insurance Program (NFIP) as the standard for floodplain management and to determine the need for flood insurance. A structure located within a special flood hazard area shown on an NFIP map has a 26 percent chance of suffering flood damage during the term of a 30-year mortgage.

Base Flood Elevation (BFE) -- The height of the base flood, usually in feet, in relation to the National Geodetic Vertical Datum of 1929, the North American Vertical Datum of 1988, or other datum referenced in the Flood Insurance Study report, or depth of the base flood, usually in feet, above the ground surface.

Base map -- A map containing geographic features (e.g., roads) used for locational reference.

Benefit/Cost Calculation – This calculation is used to rank communities' needs against those of other communities, to prioritize map updates with limited funding. It incorporates many factors in determining the estimated monetary benefit to a community of revised maps compared to the estimated cost of preparing the maps (including studies).

Conditional Letter of Map Amendment (CLOMA) – A letter from FEMA stating that a proposed structure that is not to be elevated by the placement of fill would not be inundated by the base flood, if built as proposed.

Conditional Letter of Map Revision based on Fill (CLOMR-F) – A letter from FEMA stating that a parcel of land or proposed structure that is to be elevated by the placement of fill would not be inundated by the base flood if fill is placed on the parcel as proposed or the structure is built as proposed.

Cooperating Technical Partners (CTPs) - Communities, regional agencies, and State agencies that have the interest and capability to become active partners in the FEMA Flood Hazard Mapping Program. They enter into an agreement with FEMA that formalizes their contribution and commitment to flood mapping to help ensure their flood maps are accurate, up-to-date, and to reflect local conditions.

Discharge -- The volume of water that passes a given location within a given period of time. Usually expressed in cubic feet per second.

Elevation Reference Marks (ERM) – These marks are shown on all FIRMs and identify points where a ground elevation is established by survey. These elevations are usually expressed in feet; for some communities, however, the elevations are shown in meters. Descriptions of the marks, including their elevations are provided; however, descriptions of locations appear in different places, depending on the format of the flood map.

Federal Emergency Management Agency (FEMA) – An independent agency of the Federal government, founded in 1979, which reports directly to the President. FEMA is responsible for identifying and mitigating natural and man-made hazards. The agency's mission is:

to reduce loss of life and property and protect our nation's critical infrastructure from all types of hazards through a comprehensive, risk-based, emergency management program of mitigation, preparedness, response and recovery.

Flood (also Flooding) – A general and temporary condition of partial or complete inundation of normally dry land areas. For flood insurance claim purposes, two or more structures must be inundated before flood damage will be covered.

Flood Data Update Needs – Mapping needs that require new engineering analyses, resulting in revision to the Special Flood Hazard Area (SFHA), floodway, and/or base flood elevations (BFEs). Common flood data updates include changes in hydrologic or hydraulic conditions that require new modeling.

Flood Insurance Rate Map (FIRM) -- A map on which the 100-year (1% annual chance) and 500-year (0.2% annual chance) floodplains, Base Flood Elevations, and risk premium zones (and floodway information on Map Initiatives FIRMs) are delineated to enable insurance agents to issue accurate flood insurance policies to homeowners in communities participating in the National Flood Insurance Program.

Flood Insurance Study (FIS) – An examination, evaluation, and determination of flood hazards and, if appropriate corresponding water-surface elevations. The resulting reports are used to develop Flood Insurance Rate Maps. Also know as a flood elevation study.

Floodplain or Flood-Prone Area -- Any land area susceptible to inundation by water from any source.

Floodway – Channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood discharge can be conveyed without increasing the elevation of the 100-year flood by more than a specified amount (1 foot in most states).

Geographic Information System (GIS) -- A Geographic Information System (GIS) is a computer-based system used to capture, store, analyze and display geographic information.

Hydraulic conditions - The extent of the flooding caused by a given stream discharge. Changes to hydraulic conditions include, but are not limited to, culvertization, re-channelization, or bridges.

Hydrologic conditions - Determine the quantity of stream discharge generated by a given rainfall event. Changes to hydrologic conditions include, but are not limited to, urban development, revised watershed studies, or slope of the land.

Letter of Map Amendment (LOMA) -- Official amendment, by FEMA, of a community's effective National Flood Insurance Program map to remove structure(s) or lot(s) from the floodplain that have not been elevated above the base flood elevation by placement of fill.

Letter of Map Change (LOMC) – The Letter of Map Change (LOMC) process was developed to amend or revise the published flood hazard information by letter.

A LOMC is a letter that revises or amends the FIRM according to the conditions stated in the letter. LOMCs include Letters of Map Amendment (LOMAs), Conditional Letters of Map Amendment (CLOMAs), Letters of Map Revision (LOMRs), Conditional Letters of Map Revision (CLOMRs), Letters of Map Revision Based on Fill (LOMR-F), and Conditional Letters of Map Revision Based on Fill (CLOMR-Fs). They are produced by FEMA for structures and properties of homeowners and for large development projects.

Letter of Map Revision (LOMR) – A Letter of Map Change from FEMA officially revising the current flood map to show changes to floodplains, floodways, or flood elevations.

Letter of Map Revision Based on Fill (LOMR-F) -- Official amendment, by FEMA, of a community's effective National Flood Insurance Program map to remove structure(s) or lot(s) from the floodplain when they have elevated above the Base Flood Elevation by the placement of fill.

Map Maintenance Needs – Mapping needs that do not require changes to the SFHA, floodways, or BFEs; and therefore, do not require new engineering analyses. Map maintenance needs consist of changes to map features, such as new road names, aligning panels, adding/revising elevation reference marks (ERMs), changes to corporate limits, adding Letters of Map Change (LOMCs), and converting to countywide format.

Map Needs Update Support System (**MNUSS) –** A password-protected web-based database that is used to collect and compile communities' mapping needs. These needs are ranked prioritized nationwide. MNUSS will be used as a tool by FEMA in prioritizing communities for funding updates to the National Flood Insurance Program's Flood Insurance Rate Maps.

Mapping Needs – Flood Data Update needs or Map Maintenance needs. The differences, as determined by a community, between the flooding hazards and base map information shown on a FIRM and conditions that exist in the community.

Mitigation – Within the NFIP, mitigation assists citizens in flood hazard areas reduce or eliminate long-term risks of flood damage to insurable structures.

National Flood Insurance Program (NFIP) -- Federal insurance program under which flood-prone areas are identified and flood insurance is made available to residents of participating communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage.

Slope – Determined for any area by dividing the rise over the length.

Special Flood Hazard Area (SFHA) -- Area inundated by the base flood (1-percent annual chance), identified on the Flood Insurance Rate Map as Zones A, AE, AH, AO, AR, V, VE, or A99.

Study Costs – One of the factors that contribute to the total cost of updating a community's FIRM. Associated with flood data update needs, these costs are determined by a calculation for the length of stream or coastline or alluvial flooding that requires study or restudy.

Swale – An area of land used for drainage, usually for small amounts of water, in small areas. Usually, trough-shaped and has a grassy bottom.

Velocity -- $V^2/2g$, represents the kinetic energy per pound of fluid.

Water-Surface Elevation – The height, in relation to the National Geodetic Vertical Datum of 1929 (or other datum, where specified) of floods of various magnitudes and frequencies in the identified floodplains of coastal or riverine areas.